

CLAIMS

1. Variable format printing machine, of the type constituted by at least two offset printing apparatus (1), comprising a frame (2) supporting a paper cylinder (5) against which a blanket cylinder (9) presses a blanket (11) to be printed, the printing ink being supplied on a plate cylinder (19) in contact with the blanket cylinder (9) by inking rollers, characterized in that:
 - the paper cylinder (5) of each apparatus (1) is devoid of any drive in rotation,
 - between two adjacent apparatus (1) which print one and the same face of the blanket (11), the arrangement is such that this face is in contact only with the blanket cylinders (9).
- 10 2. Machine according to Claim 1, characterized in that the plate (19) and blanket (9) cylinders are provided with means for rendering them removable, and present a diameter as a function of the format to be printed.
- 15 3. Machine according to one of Claims 1 or 2, characterized in that each printing apparatus comprises sub-assemblies grouping together the elements respectively associated with the inking rollers (29), the plate cylinder (19) and the blanket cylinder (9), which are slidably mounted on slideways of the frame (2) under the action of motorization elements which are fast with the latter so that each of these sub-assemblies is adapted to undergo a translation perpendicular to the axis of rotation of the cylinders.
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4. Machine according to Claim 3, characterized in that each printing apparatus comprises servo-control means able to adjust the position of the sub-assemblies with respect to the paper cylinder (5).

5. Machine according to one of Claims 3 or 4, characterized in that each printing apparatus comprises detection and safety means allowing two sub-assemblies to move apart from each other when the detection means detect an effort greater than a determined maximum value between their respective associated cylinders.

10 6. Machine according to Claim 5, characterized in that the safety means comprise a control logic for adjusting the offset of the cylinders with respect to one another.

7. Machine according to one of Claims 3 to 6, characterized in that the composition roller (27) and the inking rollers (29) associated therewith form part of the same sub-assembly.

15 8. Machine according to Claim 7, characterized in that the dampening roller (30) is disposed on the aforementioned sub-assembly.

9. Machine according to one of the preceding Claims, characterized in that the blanket cylinder (9) and/or the plate cylinder (19) and/or the inking rollers (29) are driven in rotation by independent motors electronically servo-controlled 20 between themselves.

10. Machine according to Claim 9, characterized in that the servo-control between themselves and with respect to the rest of the other elements of the machine of the drive motors

is effected by a system of electric shafts.

11. Machine according to one of the preceding Claims, characterized in that the drive of the inking rollers (29) in rotation is ensured by a motor of which the speed is servo-controlled so that the peripheral speed of each of these rollers is substantially equal to that of the plate and/or to the speed of displacement of the blanket (11).

12. Machine according to one of the preceding Claims, characterized in that the printing apparatus (1) are provided with a single composition roller (27) of which the diameter is constant and independent of the format to be printed and which is supplied with ink by at least four inking rollers (29).

13. Machine according to one of the preceding Claims, characterized in that at least one of the cylinders (9, 19, 27) is constituted by a removable sleeve, connected to a support cylinder.

14. Machine according to Claim 13, characterized in that the composition roller is, in functioning, held at its two ends by two bearings, of which one is provided with means allowing it, at stop, to retract so as to allow the extraction and positioning of a sleeve.

15. Machine according to one of the preceding Claims, characterized in that at least one of the ends of at least one cylinder (9, 19) is maintained embedded in a bearing fast with the frame (2), the other end being, in position of operation, in abutment

on a mobile support, this mobile support being retractable into rest position, so that, in this position, the cylinder can be maintained in overhang by the bearing.

16. Machine according to Claim 15, characterized in that the mobile support comprises at least two abutments of one end of the cylinder and complementary
5 abutment means applying the cylinder on these two abutments in order to hold it there.

17. Machine according to Claim 16, characterized in that the mobile support is in the form of a U.

18. Machine according to Claim 16, characterized in that the two abutments
10 are constituted by rotating elements.

19. Machine according to one of Claims 16 to 18, characterized in that the complementary abutment means are constituted by a pivoting lock controlled by a jack.

20. Machine according to one of the preceding Claims, characterized in that
15 the positioning of the paper cylinders (5) of the printing apparatus (1) is such that the blanket (11) to be printed is distributed in a straight line inside the machine.